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PATENT & TRADEMARK OFFICE

"RESPONSE UNDER 37 CFR 1.116-
EXPEDITED PROCEDURE EXAMINING
GROUP 1700"

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Docket No.: 243272US3

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COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

RE: Application Serial No.: 10/677,263
Applicants: Hiroshi SUGITATSU, et al.
Filing Date: October 3, 2003
For: METHOD FOR PRODUCING FEED MATERIAL FOR MOLTEN METAL PRODUCTION AND METHOD FOR PRODUCING MOLTEN METAL
Group Art Unit: 1742
Examiner: Andrews, M.

ok to enter
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SIR:

Attached hereto for filing are the following papers:

**REQUEST FOR RECONSIDERATION**

Our check in the amount of **$0.00** is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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PATENT & TRADEMARK OFFICE

"RESPONSE UNDER 37 CFR 1.116-
EXPEDITED PROCEDURE EXAMINING
GROUP 1700"

DOCKET NO: 243272US3

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
HIROSHI SUGITATSU, ET AL. : EXAMINER: ANDREWS, MELVYN J.
SERIAL NO: 10/677,263 :
FILED: OCTOBER 3, 2003 : GROUP ART UNIT: 1742
FOR: METHOD FOR PRODUCING FEED MATERIAL FOR MOLTEN METAL PRODUCTION AND METHOD FOR PRODUCING MOLTEN METAL :

## REQUEST FOR RECONSIDERATION

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

In response to the Office Action dated April 1, 2005, Applicants request the reconsideration of the final rejection of Claim 1-14, for the reasons set forth below:

Claims 1-14 have again been rejected under 35 U.S.C. § 103 as being obvious over Arakawa et al. This rejection is respectfully traversed. Applicants had previously pointed out that all of the claims recite a step of heating a mixture containing metal oxide containing material and biomass to carbonize the biomass in the mixture in a heating furnace *substantially isolated from oxygen*. By heating the mixture in a heating furnace substantially isolated from oxygen, combustion of the biomass can be minimized. In Arakawa et al., on the other hand, air or oxygen containing gas is blown into the rotary furnace during the carbonization of the organic material (column 3, lines 20-22; column 4, lines 38-40).

In reply, the examiner has noted that the paragraph bridging cols. 6-7 of Arakawa et al. describes that the carbonized material is covered by a layer of carbon dioxide and so is protected from direct reaction with air or oxygen in the furnace. The examiner has further stated that carbonization is the "crux of the method" and that this is taught by Arakawa et al.

Initially, Applicants are not certain what is meant by the "crux of the invention." The invention of Claims 1-14 is defined by all of the limitation thereof. Indeed, the MPEP cautions against any attempt to distill an invention down to its gist (crux). MPEP 2141.02. Here, the claims also recite that the furnace is substantially isolated from oxygen.

The examiner evidently considers the description in the paragraph bridging cols. 6-7 of Arakawa et al. to be evidence that the furnace in Arakawa et al. is substantially isolated from oxygen but, in fact, *it is evidence of the opposite*. Arakawa et al. describes at lines 58-65 of col. 6 that the amount of air to be blown into the furnace is controlled according to the heat requirements. The following paragraph bridging cols. 6-7 simply describes that the carbonized material is protected from direct reaction with such air. Clearly, such protection from air in the furnace would not be necessary if the furnace was substantially isolated from oxygen. Thus this rejection is without foundation.

Claims 1-14 have again been rejected under 35 U.S.C. § 103 as being obvious over Fichte et al. This rejection is also respectfully traversed. Applicant had previously pointed out that Fichte et al. does not disclose producing a feed material in a heating furnace substantially isolated from oxygen. Indeed, air will be positively blown into the furnace through the gap shown in the figure between the hood 25 and the furnace body when the blower 26 operates to evacuate the atmosphere in the furnace.

In reply, the examiner has noted the suction blower 26 is evidence that the furnace is substantially isolated from oxygen but, here again, *it is evidence of the opposite*: by withdrawing water vapor and CO/$CO_2$, the blower 26 will inherently create a low pressure region in the furnace so that outside air will be drawn into the furnace through the gap between the hood 25 and the furnace body. Thus here, as in Arakawa et al., carbonization is not provided by use of a furnace substantially isolated from oxygen but by use of a furnace into which oxygen is positively introduced.

Claims 4, 8 and 13 further recite a step of agglomerating the feed material. While the "feed material" of Claims 4 and 13 is that produced by the steps of Claim 2 and the "feed material" of Claim 8 is that produced by the steps of Claim 1, the feed material in all cases is defined as a material which has already been heated in the heating furnace to carbonize the biomass – it is not the material to be charged into the heating furnace. The Examiner has noted that Fichte et al. discloses that "the charge" may consist of agglomerates (Claim 6 of Fichte et al.). However, the "charge" in this case is biomass prior to its carbonization in the furnace and not that already heated in the furnace. Thus the "charge" is not the "feed material" defined in the claims. Accordingly, the agglomeration of the charge being fed for carbonization in Fichte et al. would not teach or suggest a step of agglomerating carbonized biomass and a metal oxide containing material from a heating furnace. For this reason as well, Claims 4, 8 and 13 define over Fichte et al.

Claims 1, 6 and 9 have been newly rejected as being obvious over Japanese patent publication 411131072. According to the examiner, the claimed invention is suggested by the sintering step of this reference. However, it is noted that JP '072 discloses sintering calcined carbonide powder and metal powder or metal oxide powder as starting materials (see Abstract). There is no disclosure that a biomass is sintered. Instead, JP '072 simply describes that the calcined carbonide powder is derived from a biomass. Since the method of this derivation is not described in JP '072, it cannot provide a teaching of carbonizing a biomass in a heating furnace substantially isolated from oxygen.

The rejection of Claims 1-14 under 35 U.S.C. § 112 is respectfully traversed. With respect to the "feed material" of Claims 1 and 2, the examiner's concern appears to be that the feed materials of Claims 1 and 2 are the products of different steps. However, since

Claims 1 and 2 are each an independent claim, Applicants respectfully submit that those skilled in the art would understand the feed material of each claim to be the product of the steps recited therein.

With respect to the objection to Claims 7 and 12, it is noted that Claim 7 depends from Claim 1 and Claim 12 depends from Claim 2. Accordingly those skilled in the art would recognize that the feed material of each of these dependent claims is the product of the steps recited therein.

With respect to Claims 4, 8 and 13, Claim 4 recites the step of agglomerating the mixture of Claim 2 between the step of carbonizing the biomass contained in the mixture and the step of charging the mixture in the reducing furnace; Claim 8 recites the step of agglomerating the feed material of Claim 1; Claim 13 recites the step of agglomerating the feed material of Claim 2. In each case the material being agglomerated is clearly recited.

Applicants therefore believe that the present application is in condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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